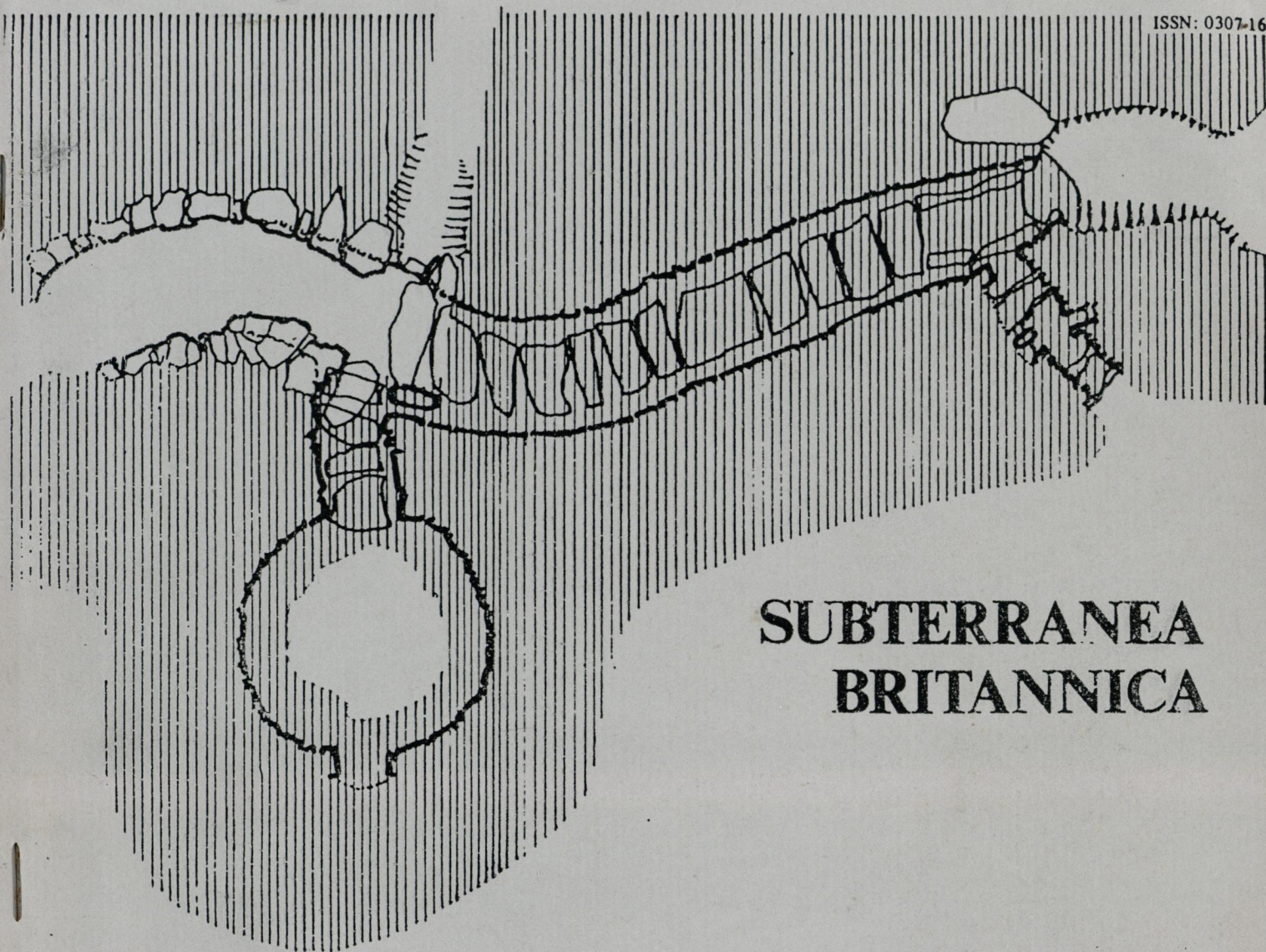




SUBTERRANEA BRITANNICA

Bulletin No.22

*Compiled and published by
Subterranea Britannica
Printed by N. Catford, Sutton, Sy.*

THE BULLETIN OF SUBTERRANEA BRITANNICA

No 22 - September 1985

CONTENTS

Page

- 2 Editorial - Sylvia Beamon
- 2 Visits to Mines and Caverns at Newcastle and Castleton, 1810-11 - Tom Doig
- 5 Winter Day Conference - 26th January 1985 - Malcolm Tadd
- 8 Notes on Margate Caves and Eastry Caves, Kent - Sylvia Beamon
- 10 Tunnels Under the Leeds and Liverpool Canal in Yorkshire - Tim Smith
- 11 The Covered Way to Gatton Church, Surrey - Paul W. Sowan
- 13 Frank Illingworth's Tunnel - John Vigar
- 16 The Duke of Portland/Thomas Druce's Tunnel - Roger Morgan
- 17 Study Weekend at Ironbridge - 14-16th June 1985 - Deryck Laming
- 18 Book Review - "Out of the Darkness: a brief history and description of the Old Quarry, Beer" by John Scott and Gladys Gray - Deryck Laming

SUBTERRANEA BRITANNICA

EXECUTIVE COMMITTEE

Officers :

Paul W. Sowan, B.Sc., F.R.G.S., F.G.S., F.L.S., Chairman - 96a Brighton Road, South Croydon, Surrey CR2 6AD.

Malcolm Tadd, B.Sc., Secretary - 65 Trindles Road, South Nutfield, Redhill, Surrey (Tel: 073-782-3456).

Roger Morgan, B.Sc., Treasurer - 15a Kensington Court Gardens, Kensington Court Place, London W8 (Tel: 01-937 2037).

Committee Members :

Dave Barnes, Martin Black, Tom Doig, Margaret and Tony Howells, Deryck Laming, Rod Le Gear, Alan MacCormick, Maureen Mahony, Phil Marshall, Barbara Tadd, Ennid Tillson; Sylvia Beamon (ex officio) Representative on the General Council of the Societe Francaise d'Etude des Souterrains and the Council for British Archaeology.

This Bulletin is the official publication of Subterranea Britannica.

Subterranea Britannica is associated with Societe Francaise d'Etude des Souterrains of France, Arbeitskreis fur Erdstallforschung of Germany, and SOBERES of Belgium.

The Bulletin has been compiled by Sylvia P. Beamon with assistance from Rod Le Gear, Deryck Laming, Jenny Plumer and Paul Sowan.

EDITORIAL

Sylvia Beamon

The format of the Bulletin is about to change. Since the introduction of the Newsletter last year, it was felt that an annual Bulletin each October would be more beneficial for members as it would concentrate on more formal and scientific articles: excluded would be notices, general information etc. To support this decision the Society is seeking grants towards publication costs and to update and improve the quality of the Bulletin. Over the past few issues, due to old machinery and other cost-cutting activities its presentation has been far from perfect. If anyone has any suggestions from where we can apply for financial assistance, please contact the Editor or Chairman.

The above is not the only alteration to the Society's activities. The Winter Day Conference is being moved from January to March, so in 1986 it will be held on March 8th in London. When you have your 1986 diaries please make a note of this date. It is hoped that this change will assist those members who have had difficulty in making the journey to Cambridge, especially in the depths of winter.

VISITS TO MINES AND CAVERNS AT NEWCASTLE AND CASTLETON, 1810-11

Tom Doig

The following extract is taken from *An American in Regency England: The Journal of a Tour in 1810-1811* by Louis Simond: edited with an Introduction and Notes by Christopher Hibbert; pub. The History Book Club, London, 1968, pp 105-107, 113-116.

"March 1.--The name of Newcastle is identified with that of coals, the country about containing immense strata of this mineral, which is the object of a great trade. There are farms underground as well as on the surface, and leased separately. I know of a subterranean farm of this kind of 5000 acres, for which £3000 sterling a-year is paid, and a per centage depending on the quantity of coals extracted, which may double that rent.

"I accepted with pleasure an invitation to descend in a coalmine. The mode is rather alarming. The extremity of the rope which works up and down the shaft being formed into a loop, you pass one leg through it, so as to sit, or to be almost astride on the rope; then, hugging it with both arms, you are turned off from the platform over a dark abyss, where you would hardly venture if the depth was seen. This was 63 fathoms deep (378 feet) (115 m). One of the workmen bestrode the loop by the side of me, and down we went with considerable rapidity. The wall of rock seemed to rush upwards - the darkness increased - the mouth above appeared a mere speck of light. I shut my eyes for fear of growing giddy; the motion soon diminished, and we touched the ground. Here we stopped for two other persons. Each of us had a flannel dress and a candle, and thus proceeded through a long passage - rock above, rock below - and a shining black wall of coal on each side; a railway in the middle for horses (for there are fifty or sixty horses living in this subterraneous world), to draw two four-wheel carriages, with each eight large baskets of coal; these baskets are brought one at a time by diminutive waggons, on four little wheels, drawn or pushed by boys along other railways, coming down the side streets to this main horse-road, the ceiling of which is cut in the main rock, high enough for a man to stand upright, while the side streets are no higher than the stratum of coals (4½ feet) (1.4 m), therefore you must walk stooping.

"The whole extent of the mine is worked in streets, intersecting each other at right angles, 24 feet (7.3 m) wide and 36 (11 m) feet asunder, leaving therefore solid blocks 36 feet (11 m) every way. The miners have two enemies to contend with, air and water; that air is hydrogen gas, continually emitted by the coals, with an audible hissing noise. The contact of the lights necessary to be used would infallibly set fire to the hydrogen gas, if allowed to accumulate, and either blow up to singe the miners

severely; it is therefore necessary that there should be a continual current of air going in and out by two different issues. At the beginning of the works, and while there is only one shaft, this is effected by means of a wooden partition, carried down along the middle of the shaft, then along the first street opened, and so disposed afterwards, that the air which comes down the shaft on one side of the partition, may circulate successively through each and every street before it returns up the other division of the shaft, a small fire establishing and keeping up the draught. As to water, the dip, or inclination of the stratum of coals being known, all the art consists in making the first shaft in the lowest part of the tract; a steam-engine at the top drains up the water, and draws up the coals. Wherever the shaft comes in contact with any stratum yielding water, it must be kept out by means of a drum, or lining of timber, made tight round the inside of the shaft. I saw a small spring of clear water issuing from the bed of coal below, near the stables where the horses are kept, and serving to water them. These horses are in very good order; their coats soft and glossy, like the skin of a mole: they are conveyed down, or taken out, with great care and expedition, by means of a great net or bag.

"Some of the mines are more extensive than the city of Philadelphia, and their streets are as regular. When the whole area is thus excavated in streets, it must not be supposed that the solid blocks are abandoned; but, beginning at the furthest extremity, the miners proceed to pull down all the blocks one after the other. When a space of two or three hundred feet (60-90 m) square has been thus left unsupported, the ceiling of solid rock begins to sag and crack, with a hideous noise; the workmen go on notwithstanding, trusting that the ceiling will not break down close to the blocks, but some way behind; and such is the case - the cracks grow wider and wider - the rock bends down, coming at last in contact with the floor - and the whole extent is thus filled up. On the surface of the ground, however, nothing is perceived; the rocks are left to manage the business among themselves below. Houses - and stone houses too - remain standing, and their inhabitants sleep in peace all the while.

"The miners know, by the nature of the rocks they meet while sinking the shaft, when they approach the coal, which is generally found between two beds of white sandstone. They sink the shaft at the rate of about two fathoms (3.65 m) a-week.

"The consumption of London has increased one-fourth in the course of the last few years; it amounts now to about 1,000,000 chaldrons, or 1,200,000 tons annually, forming 6000 cargoes of vessels of 200 tons each; and as they perform twelve voyages a-year, the trade employs 500 ships; the crews consist of two old sailors, for captain and mate, and seven or eight apprentices, all protected from impressment; the two old men have £9 each voyage. The mere coal trade between Newcastle and London, is therefore, a nursery for 4000 young sailors, and a preferment for 1000 old ones. The celebrated navigator, Captain Cook, had served his time on board a collier.

"The coal drawn to the surface of the soil is conveyed to the lighters by means of low carriages, on four small wheels fixed to their axis, that their motion may be perfectly equal. They travel on rail-ways, which are composed of two bars of iron, upon which the wheels, which have grooves at their circumference, run without impediment. Ninety-two bushels, weighing about two tons, besides the waggon, are drawn by a single horse, with so much ease that the driver is obliged, on the least descent of the road, to press on the wheel with a sort of lever, to retard its motion by the friction, that the carriage may not run too much on the horse. The lighters, called keels, of about fifteen tons, carry the coals on board vessels waiting in deep water. It is remarked, that the men employed underground enjoy better health than those on the surface; the regularity of temperature securing them against many disorders, and the air constantly renewed being sufficiently pure.

"March 14.— ... On approaching Castleton, our quarters for the night, the very old castle, from which it derives its name, appears behind, on the brow of a high perpendicular rock. It was a ruin at the time of the Romans, who called it *Arx Diaboli*, and its origin was then unknown. With a guide, who introduced himself on arrival, we proceeded immediately to the renowned cavern, called the Peak's Hole, at the foot of the rock of the castle. I was struck, on approaching it, with its

resemblance to the rock of the *fontaine de Vaucluse*. The entrance is 120 feet (36.5 m) wide, and 70 feet (21 m) high. Advancing under the spacious dome, we were surprised to see several small houses lost in its immensity, and a number of twine-makers, who have been in possession of this work-shop time immemorial. Here we received each of us a lighted candle, and, descending by a narrow passage at the extremity of the first cavern, we soon came to a little lake of very clear water, covering the area of a second cavern, the ceiling of which was so low, that, crossing the water in a boat, you are obliged to lie down. On landing on the other side, we found ourselves in the third division of this subterranean suite of apartments. This one, still more vast than the first, is 250 feet (76 m) square, and 120 feet (36.5) high. The guides, who understand their business, prepare here a little *coup-de-theatre* for the curious under their protection. Some children, brought up to the part they are to act, reach the spot before-hand, and, ascending a sort of natural circular gallery at a great height, place themselves in picturesque attitudes, with lights in their hands, and sing. The effect produced by these angels of darkness is undoubtedly very striking. You next come to a long passage, and a slippery descent of 150 feet (46 m), so low that you cannot stand upright without danger for your head against sharp inequalities of the rock; and, however fatal a place of this sort may be to the lustre of a new hat, I would not advise any body to leave it at the entrance of the cavern, as I had done. You meet here with a stream of water flowing rapidly along which must be crossed several times by means of stepping-stones or upon the ready back of the guide. The stream soon finds its way through a side-opening in the rock, where it is lost. At last, after a toilsome journey of perhaps half a mile (800 m), you reach nearly the farthest extremity of the cavern, and must make haste to turn back before the candles are burnt out, which would leave you in a distressed plight. The children and their lights surprise you again on your return in a new and beautiful situation; but the most striking part of the whole is the distant reappearance of day-light illuminating the arch of the great entrance. The whole interior cavern is at times full of water. An internal stream rushes out of the rock, and in again at another place, but never reaches the great entrance. After the waters have subsided, stones are found of a nature totally different from the surrounding rock, as well as plants and sticks. The body of a snake, or some long shaped fish is shown in the rock, which is calcareous.

"After a hasty dinner, we set out again with our guide for another subterraneous expedition, bent upon fulfilling the utmost of our duties as tourists. The night was beautiful, clear, starry and cool, and the hills illuminated with fires of furze and broom.

"At the entrance of the Speedwell lead-mine, we were provided each with a candle, and descended 106 slippery steps in the rock at the bottom of which we found a boat, and embarked on a subterranean canal seven feet (2.1 m) wide, filling a horizontal gallery wholly cut in the rock, with about two feet (60 cm) of water. The long narrow boat glided along swiftly, impelled by the men giving a shove now and then against the rock on either side. A noise, as of a distant cataract, soon attracted our attention, and, increasing every moment, would certainly have occasioned great terror, if we had not been confident that our conductors knew what they were about. At last, when the noise was at the loudest, we emerged suddenly from the narrow gallery into open space and darkness; a cavern of immeasurable height above, and, close to us on the left, an abyss, into which the water of our canal, and a pretty considerable stream, coming from higher parts of the cavern, fell over a low stone wall, which alone prevented our boat from sliding in. It was rather a frightful sight. One of the miners, climbing up the rocks on the right a good way with some dry wood, provided for the purpose, lighted a fire, which discovered to us vast recesses; but there was still a space above which reflected no light. Sky-rockets have been sent up in the vast void without meeting the top. Miners have been let down the water-fall by a rope, and found, at 90 feet (27 m) depth, an immense reservoir, into which they threw the lead, which touched only at 300 feet (90 m). An old miner who was in a boat, told us of their surprise and terror, when, after years of labour (five or six years, I think) and, piercing about 900 yards (823 m) into the rock in search of veins of lead, of which they found now and then specimens, they broke suddenly into this great cavern, and heard the tremendous rushing of water. They soon, however, not only familiarized themselves with the cataract, but thought of profiting by it; and building the low wall already mentioned, across the

very brink of the fall, threw two feet (60 cm) of water in their gallery, which made it navigable. They then began another gallery in a line with the first, on the other side of the cavern. Five or six years more and a progress of another half mile (800 m), brought them to a second cavern, not so high or deep as the first, but extending infinitely further. They explored it for three miles (4.8 km) without finding the extremity. The area is very rugged and irregular, and there is no knowing exactly where it ends. But there is a sensible current of air through it; the flame of candles pointing always to one side, and burning bright, and the respiration of men quite free. All the stones and rubbish of the second gallery were thrown into the waterfall without any perceivable diminution of depth. The whole work lasted eleven years. No vein sufficiently rich to pay the expence was discovered; but it will remain a lasting monument of industry and perseverance, though unhappily not rewarded; and afford a curious insight into the interior state of calcareous rocks, which seem all to be more or less intersected with such immense caverns, and reservoirs of springs and rivers. Beautiful crystals of carbonate of lime, known by the name of Derbyshire spar, and remains of fish and plants, are discovered every day in excavating the mines of this neighbourhood. There are several other level galleries in Derbyshire longer than that of the Speedwell mine - one is four miles long (6.4 km). On our return, one of our miners, a dwarfish old man, regaled us with a song "Black-ey'd Susan," in a voice of thunder, as little harmonious as it was powerful..."

Louis Simond landed at Falmouth from New York in 1809 and for the next twenty-one months he made an extensive tour of England, Scotland and Wales. Everywhere he went he took his journal and recorded his impressions of the activities he saw.

The journal was first published in London under the title of *Journal of a Tour and Residence in Great Britain during the Years 1810 and 1811 by a Native of France with Remarks on the Country, its Arts, Literature, and Politics, and on the Manners and Customs of its Inhabitants*. The author, Louis Simond, was the son of a well-to-do French Protestant family, born in 1767. Shortly before the outbreak of the French Revolution he emigrated to the United States of America, established business as a ship owner and married a niece of John Wilkes.

WINTER DAY CONFERENCE - Lucy Cavendish College, 26th January 1985

Malcolm Tadd

The morning began with Paul Sowan and Bruce Osborne showing slides taken in the Maastricht area of the Netherlands last summer when a small group of Subterranea Britannica members stayed at the home of Eef and Margaret Smitschuijsen.

Maastricht is renowned for its very extensive limestone (strictly creamy yellow chalk) mines which at one time ran continuously into Belgium. Sadly much of the system has been destroyed by the modern cement industry which operates an open-cast system. Despite this there remains much to explore and some of the galleries are still used for such things as mushroom growing or have been decorated for the benefit of tourists.

The whole subject of limestone mines in the Maastricht district is large and fascinating and has been described in previous bulletins (Bulletins 12 and 13).

Various fortifications afford other underground attractions in the district.

Maastricht itself occupies a strategic position in the small province of Limburg which is sandwiched between Belgium and Germany. It acquired military fame in 1673 by being the first bastioned fortress to fall to Marshal de Vauban of Louis XIV's army, using Vauban's newly invented form of siege warfare. Today casemates from this era can be visited and also miles of tunnels built between 1771 and 1783 as part of Du Moulin's later system of fortification.

It is hoped that Paul and Bruce's presentation will inspire members to attend the

International Symposium on Stone Mining at Maastricht, 24-31 July 1986 - this despite the lighting at Lucy Cavendish College which marred some of the presentation.

The second speaker was Tony Howard on the History and Present Position of the Channel Tunnel.

Tony is a professional engineer working for Mott Hay and Anderson, a firm long associated with tunnelling. Tony is also one of those regrettably rare individuals whose work is also his passion. Not only was his talk authoritative, it was delivered in the most excellent and enthusiastic manner, copiously illustrated with very interesting slides and the Chairman had to intervene to terminate the flood of questions at the end which threatened to take up a large chunk of the lunch hour.

Attempts to dig the Channel Tunnel were started at the end of the last century and various schemes were mooted, most of which pre-empted our present ideas. All schemes involved digging in the Lower Chalk just above the Gault Clay which constituted an excellent stratum under the whole channel. Had the Victorian engineers persisted, they would have probably succeeded, although more by luck than judgement for they had no way of knowing as we do today, how free of faults the Lower Chalk was.

Vacillating political opinions about undermining the nation's security were the downfall of the Victorian schemes; today it is the vagaries of the economic climate which hold back the schemes.

The modern tunnel of the 1970s intercepted the old Beaumont tunnel of last century which was re-opened and found to be still usable although some damage had been wrought by subterranean pressures near the shoreline. Access was down an old vertical shaft in the cliff which had to be cleared of infill.

Types of tunnelling machines were discussed and the modern methods of lining the tunnel. Compared to the Victorian project, the modern one appeared as an industrial giant.

There is a serious problem in surveying attendant on digging the Channel Tunnel from both ends simultaneously. Tony discussed the difficulty in relating the French measurement of depths below sea-level to the English.

A latter day problem is whether the tunnel should be for cars or for a railway arranged for transporting cars. A tunnel for cars alone requires a massive investment in ventilation whereas a train in a single tunnel would start off by having to push a column of air of more than twenty miles long - an impossible energy requirement. Therefore, with a train there must be a second tunnel with numerous side connections with the first to allow the air to be pushed sideways.

Finally, Tony provided a useful bibliography (see p 8).

The third speaker was Brigadier Hamilton Bailey on Prisoner of War Tunnels.

The Brigadier was a young sapper officer who hadn't completed his training in 1940 when captured by the Germans. The bit he had missed was on tunnelling! Despite this he spent the rest of the war heavily committed to tunnelling out of POW camps until sent to Colditz from which escape by tunnelling was impossible.

The story of his adventures made an enthralling lecture.

Those of us who have occupied their leisure hours trying to penetrate lost mines and undiscovered caves by digging highly restricted, unshored-up, rabbit-hole-size exploratory tunnels can be forgiven for regarding the usual TV and film versions of relatively commodious POW tunnels with their elaborate timbering and little railways with some scepticism. But so much for cynicism, for although at times in actual reality, belly squirming was resorted to, the films are correct in their extensive portrayal of relatively well engineered tunnels.

At Warburg, which was a converted hutted barracks, the soil was easy for tunnelling, but it was difficult to hide the spoil under the huts from the guards ("Ferrets"). Nevertheless this was accomplished, but the first tunnel dug in the frozen ground of the winter of 1941-42 collapsed during the spring thaw.

The second tunnel was dug from the coal cellar beneath the cook-house and since there was a short period during the evening when no guards were present this enabled shifts of diggers to be changed over. The pile of coal acted both to conceal the tunnel entrance and hide the excavated spoil.

The tunnel was never successful. Firstly a freak cloud burst caused part of it to be washed in which necessitated a change in direction. Secondly there was a tragedy when one of the diggers was killed by electrocution. A lighting cable wired to the cook-house electrical system was the cause and the Germans had to be informed.

The prison camp of Eichstatt backed onto a rocky hill-side and was otherwise protected from tunnelling by underground microphones. Any tunnelling attempt had to be well planned and in the sole attempt a concealed shaft was sunk next to one of the prison's toilet pans. From this an elaborate route led under the building and up into the hillside. Ingenuous ventilation and signalling systems were installed and the spoil was transported in containers on rollers and not on a railway.

This time success attended the efforts; 65 prisoners escaped but unfortunately all were later re-captured.

Finally, the Brigadier was transferred to Colditz where, despite adventures in the drains and in shafts sunk in its walls, tunnelling out was virtually impossible.

Three interesting facts which arose during the course of the talk and which, hopefully, will be of no use at all to Subterranea Britannica members, are that it was possible to breathe in an atmosphere so depleted in oxygen that lighted candles are extinguished, that the Brigadier's team claimed a record for digging at the rate of 40 feet (12 m) per week and that timber for tunnel linings can be stolen from bunk beds and from boards placed between floors and ceilings to support insulating materials.

Nesta Caiger transported us from the harsh world of the POW camps to the gentle delights of the gardens of large houses. She explained that although her talk was billed as "Subterranean Features of Georgian Gardens" she was not going to confine herself strictly to the Georgian period. Her well illustrated message was, if you visit country mansions, to keep an eye open for the usually decaying structures in the gardens. Most of the limited money available for restoration will have been spent on the mansion while in the garden structures may have been left to rot.

There seems to be a vast number of structures with underground associations one can find in an old garden. These include ice houses, ice wells, cess pits, wells, pump houses, bath houses, conduits, reservoirs, storage tanks, mausoleums, mortuaries and meat stores.

Nesta drew on the Cobham Hall estate in Kent for her examples, an account of which is written in Kent Underground Research Group's Newsletter No. 1, 1985.

Nesta's contribution to the afternoon was an essentially visual one and perhaps she could get together with Nick Catford who ended the afternoon with a short slide presentation on the East Surrey Mines, and produce a highly illustrated booklet on surviving underground garden structures.

Nick Catford is a professional photographer who specialises in underground photographs and is currently engaged in the photographic survey of the East Surrey mines for which Subterranea Britannica received a grant from Lloyds Bank. His photographs are strikingly better than any previously produced in the East Surrey area.

Also shown towards the end of the afternoon, by Paul Sowan, were slides of a semi-

underground tunnel at Gatton Park near Merstham in Surrey which was constructed so that the local landed gentry had their own private route from their house into the church (see p 11).

Finally, Roger Morgan should be congratulated on organising a very interesting day's programme.

Bibliography of the Channel Tunnel

Slater, H. and Barnett, C. (1957), The Channel Tunnel: Allan Wingate.

Pequignot, C.A. (1972), Chunnel: CR Books Limited.

Haining, Peter (1972), Eurotunnel - an illustrated history of the Channel Tunnel scheme: New English Library.

Muir Wood, Sir Alan (1980), A history of the Channel Tunnel: Report of British Tunnelling Society meeting. Tunnels and Tunnelling.

Parliamentary Reports:

Second report from the House of Commons Transport Committee, Session 1980-81 - The Channel Link: (Three volumes - reviews schemes at that date, but not 'Euroroute').

House of Commons Transport Committee, Session 1981-82 - The Channel Link: (Includes second report by Sir Alec Cairncross KCMG).

Geology and Site Investigation:

Bruckshaw, Goguel, Harding, and Malcor - The work of the Channel Tunnel Study Group 1958-1960: I.C.E. Proceedings, February 1961 and March 1962.

Grange and Muir Wood - The site investigations for a Channel Tunnel: I.C.E. Proceedings, January 1970 and December 1970.

Tunnelling System:

Morgan, Barratt and Tilley - The tunnelling system for the British section of the Channel tunnel Phase II works: T.R.R.L. Laboratory Report 734, 1977.

Design:

Gould, Jackson and Tough - The design of the Channel Tunnel: The Structural Engineer (Journal I Struct E), February 1975 and December 1975.

General view and comparison with Seikan Tunnel:

Megaw and Bartlett - Tunnels - Planning, Design, Construction, Vol 1, p 257 seq. Ellis Horwood, 1981.

NOTES ON MARGATE CAVES AND EASTRY CAVES, KENT

Sylvia Beamon

The Editor very recently purchased a second-hand copy of Granville Squiers' *Secret Hiding Places*, published by Stanley Paul & Co Ltd, 1934. In view of the Society's interest in the Margate Caves since the East Kent Study Weekend she felt members would like to read the author's comments particularly as he visited and described them from a visit in 1910 which fills an historical gap between when they were discovered in the late 18th century and their reopening in 1958.

"Comparatively few people are aware that the old town of *Margate* is actually riddled with a most remarkable series of caves and passages in the chalk. I became interested in those places about 1910, when convalescing in the town, and spent many hours below ground taking rubbings of various mysterious inscriptions cut on the walls. At that time the caves were almost unknown and had just been reopened to the public on behalf of Trinity Church, which owns the entrance to them.

"Experts had declared that many of these passages showed the marks of the flint implements of prehistoric men. These particular sections were in the shape of an upended coffin and, if memory serves me, were sixty feet high. These workings had been considerably added to through the ages, and passages and stairs ran in every direction. They had been extensively used by smugglers and others, as the multitude of dates and inscriptions on the walls indicated.

"There was a number of supposed tombs, made of cut chalk blocks welded together by pouring water between the joints. Near these were many interesting and well-carved obituary notices of sailors of all nationalities, the dates being mostly late eighteenth and early nineteenth century. The elaboration of some showed that a number of men had been compelled by circumstances to spend long hours whiling away the time underground.

"One large chamber was a typical smugglers' cavern. Round the walls were painted some crude figures of ships, soldiers and sailors of the Napoleonic period. Across one corner a horizontal wooden bar was propped at a convenient height for persons to be strung up by their wrists to it, and that is what I like to believe it was for. Lying close by were the remains of a rowing boat with ancient copper nails. These seems a curious piece of furniture for an underground cavern, but we shall see that it had its uses.

"Many of the chambers and passages had been blocked by tons of rubbish that had been shot in from above, so that the full extent of them had never been discovered. When clearing some of this debris, a neatly cut well was discovered, in a corner adjoining the smugglers' cavern, and a can was lowered into it on a long string, in the hope that it would prove to be the source of a fresh-water supply. The can only rattled on the hard bottom, so it was left there, and attention turned to other places.

"Next day, when somebody remembered to retrieve the can, it came up full of salt water. It was then found that a passage ran from the well to the sea, about a furlong away. Along this the smugglers' cargoes were floated by boat and then drawn up the well, at the head of which was a convenient niche where a guard could stand ready to club any unwanted visitor who tried to use the same route.

"One day, whilst I was there, an old lady who visited the place told us that she remembered, as a girl, entering these caves through the cliff, which is now covered by the sea-wall. She described similar wall paintings there, so that the place appears to have had further ramifications in that direction. The passages could easily be closed up with a few chalk blocks and this was perhaps done later to prevent visitors wandering too far.

"I used to explore these caves for hours, fascinated with their curious windings and oblivious of the fact that I was covering my clothing with chalk and candle grease. Caution was needed, for one could easily become lost. Occasionally a gleam of daylight appeared in the roof, shining through a grating covering a hole in a garden, or even a street. Sometimes a cart would rumble overhead in an alarming fashion and one wondered that Margate had not been engulfed in a huge subsidence. It was a weird experience which I have never forgotten.

"During the Great War (1914-18) the caves were put to practical use once more, for a passage was cut in from the vicarage and they became air-raid shelters. This had the unfortunate effect of creating a draught which dried up many of the walls and caused them to crumble. They were afterwards closed to the public and a letter from

the vicar assures me that I should find little profit in visiting them now. Otherwise I had hoped to reproduce some interesting photographs."

Mr J. Gardner, proprietor of the Margate Caves, explained to the Editor in a letter dated 20th November 1981 that his interest in the caves started when he was showing a party from Holy Trinity Church around Margate and the Vicar suggested he reopen the Margate Caves (see Bulletin No. 20) which Mr Gardner had never heard of. He obtained Church permission to reopen the caves, if he could only find the entrance. He discovered a large slab of stone in in the old garden of the bombed Vicarage. When it was lifted, those involved lowered ladder after ladder down the hole, eventually about 50 ft (15 m) of ladders were used.

Mr Gardner went down the ladders and was amazed at the size of the caves. He then got a lease on them from the Church and having very little money at the time negotiated with a group of art students from a local college and promised them good pay if the entrance could be found.

After much digging, Mr Gardner found a small hole in the debris and, putting a candle to it, found that air was flowing in and out the hole (about 5 minutes inwards and 5 minutes outwards) implying a large cave.

They broke through and on the first day that the caves were officially reopened in 1958, there was enough money to pay for the students' work.

Mr Gardner also mentioned that the paintings in the Eastry Caves (see Bulletin No. 18) were executed by a very good artist who was very frightened while painting them and every now and again had to be visited and cheered up. There are in fact low levels in these caves, the last one finishing in water. His theory was that it was the healing well of St Ivo - stories of which are still told.

One particular painting, a giant viking drawing his sword and painted in ultra violet colours, was a great success with the visitors.

----- TUNNELS UNDER THE LEEDS AND LIVERPOOL CANAL IN YORKSHIRE

Tim Smith

There are two road "tunnels" under the Leeds and Liverpool Canal in Yorkshire, one at Kildwick, the other near Skipton.

1. The Kildwick Tunnel (SE 0105 4590)

Between Crosshills and Kildwick the Keighley to Kendal Turnpike Road crosses the valley of the River Aire over an 18th Century causeway. The river itself is crossed by the mediaeval Kildwick Bridge, said to date from 1305 but extended to the east in 1780. After passing Kildwick Church the original route climbed up through Farnhill and ran along the edge of Farnhill Moor before dropping into Low Bradley. The Leeds and Liverpool Canal passes over the old turnpike between Kildwick and Farnhill. This section of canal opened in 1773.

In 1786 the present road from Kildwick to Snaygill was constructed to avoid the narrow and steep hilly section via Farnhill and Low Bradley. The new route involved heavy engineering works, the road for much of the section being on a specially constructed shelf below the level of the canal, which was used to transport constructional materials. This is the present main road up Airedale but the road through the tunnel is still in use serving local communities.

The road tunnel, presumably built using cut-and-cover or rather just cover techniques, is about 150 ft (45 m) long, and about 14 ft (4.25 m) wide. At its lowest point it is 8 ft 6 in (2.6 m) high. The canal crosses over the tunnel very obliquely and so the tunnel was built as it was because the method of building a skew arch had not been

developed. The first skew aqueduct was that taking the Ashton Canal over Store Street in Manchester (1799). On the uphill side the road ascends through a deep cutting to Farnhill village. The tunnel is lined with sandstone, presumably from the quarries on Farnhill Moor. Some blocks bear mason's marks. On the west side a lining of galvanised iron plate has been inserted. At each end the tunnel mouths are somewhat higher than the centre section. The arch is almost semicircular springing from a string course which runs through the tunnel at a height of about 4 ft 4 in (1.3 m) in the middle of the tunnel, higher at each end. At the Kildwick end there is a second, smaller arch of unknown purpose to the right of the road tunnel.

Although its method of construction did not involve any tunnelling methods, passing through it certainly gives the impression of a tunnel and not a bridge. Locally it is known as the Culvert, a name also applied to the second of these tunnels as it was to the masonry aqueduct over Yorkshire Street in Burnley, where it passes under the famous Burnley Embankment (replaced by a conventional steel aqueduct in 1926).

2. The Niffany Tunnel (SD 9645 5175)

About one and a half (2.4 km) miles west of Skipton there is another tunnel where Culvert Lane passes under the canal. This tunnel is just 100 ft (30 m) long and 11 ft 10 in (3.6 m) wide, on a slight skew and with a sandstone lining throughout. It is 5 ft 1 in (1.55 m) high with a very flat arch springing from a string course running through the tunnel at a height of 4 ft 5 in (1.35 m). Arches of this type are common in Craven. This section of canal opened in 1774.

THE COVERED WAY TO GATTON CHURCH, SURREY

Paul W. Sowan

The north transept of St Andrew's Church at Gatton is, in Nairn & Pevsner's (1962) words:

"...an untouched family pew, the perfect example of the English nobleman's wish to worship in comfort. It has a fireplace, panelled overmantel, padded benches, and comfortable chairs. With its air of being a sumptuous private chapel that has somehow got detached from the house, it is among the best in the country..."

This private pew was not entirely detached from the house (Gatton Park), as the same authors inform us that:

"There is a covered way from this transept (the private pew...), to the house, though in very bad condition; it ought to be kept as a rarity".

Extensive rebuilding and remodelling of both house and church commenced in or shortly after 1830 when Frederick John, fifth Lord Monson, purchased the estate for £100,000. He filled both buildings with furnishings, fittings and ornaments collected during the course of his extensive tours of Europe; no expense was spared. The covered way, a stone-built passage half buried as viewed from the churchyard, was presumably his work, although he died in his 33rd year in 1841 leaving the rebuilding to be completed by his successors.

Presumably it was for protection from inclement weather, rather than from the gaze of humbler parishioners, that the covered way was built. At the passing of the Reform Act in 1832, Gatton was one of the rottenest of the "rotten boroughs" in the country; William Cobbett described Gatton as "a very rascally spot of earth".

Only the several metres of the end of the covered way adjoining the church and churchyard survives today. Gatton Park was severely damaged by fire in 1934 and although it was rebuilt to a modified design the "house" end of the passage was not

GATTON PARISH CHURCH



Photographs
Sylvia Beamon
1984

Plan taken from Ordnance Survey
1st edition 25" Surrey 26 (12),
c. 1870

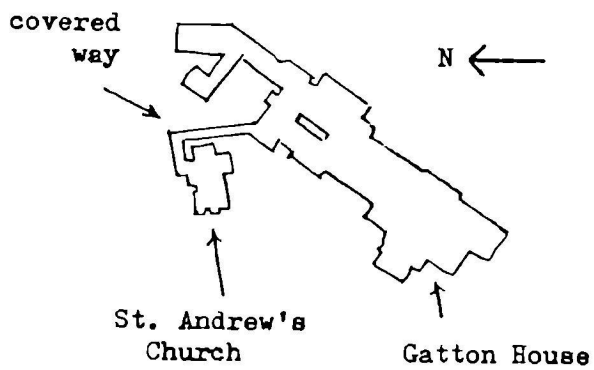
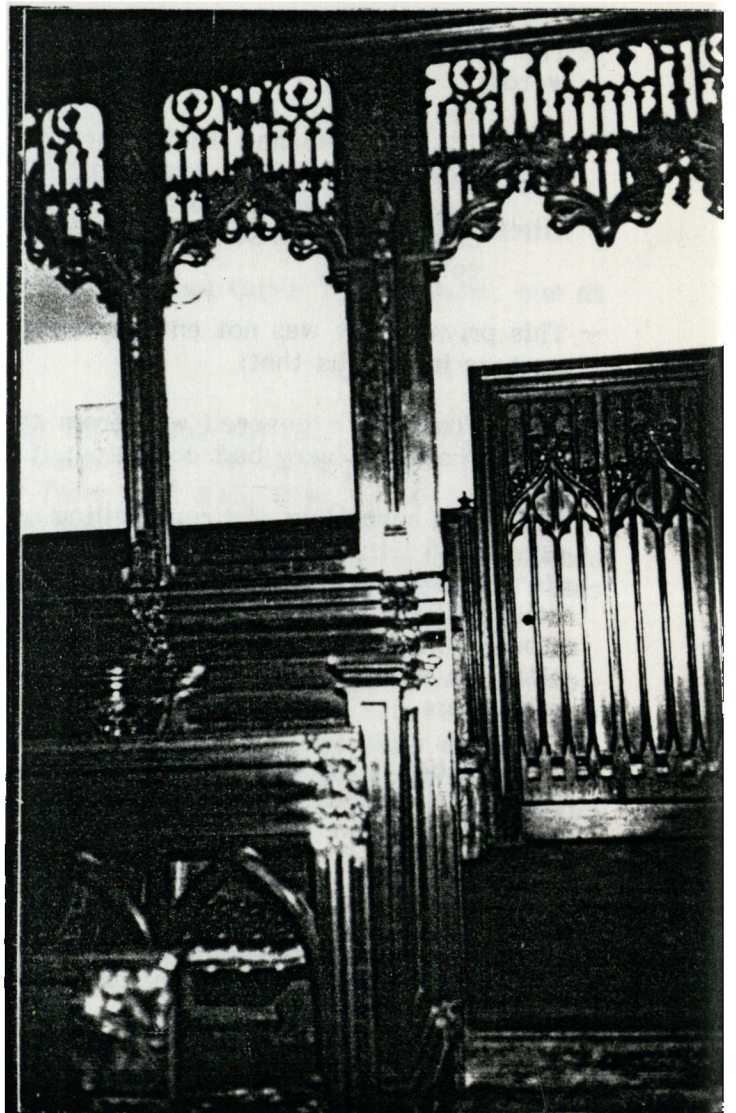


Photo - door leading from the
church pew into the
covered way. →



restored, although fragments of wall and paving survive which appear to indicate its former alignment. The severed end was walled-up with local firestone, which material had been used for the whole of the exterior of the passage (although it seems likely that the interior was lined with other materials). The original course and extent of the passage are shewn clearly on the first edition of the Ordnance Survey's 25-inch plan. The first 50 feet (15 m) ran approximately northeast, parallel with the rear wall of the house. The next 85 feet (26 m) ran northwards away from the house. The final 33 feet (10 m) ran westwards to join the north transept of the church - this last stretch included a marked gain in height so presumably there are steps up within it. The final two sections, totalling some 120 feet (36 m) remain. Two or three high-level windows which overlooked the churchyard at ground level have recently been bricked-in to prevent access. Doors to the outside remain at the upper and lower ends of the final 35 feet (10.5 m) as well as the door communicating with the north transept, although it is not known if access to the interior of the passage is still possible.

References

Nairn, I. and Pevsner, N., (1962), The Buildings of England: Surrey. 1st Edn. Penguin Books.

Nairn I. and Pevsner, N., (1971), The Buildings of England: Surrey. 2nd Edn. Penguin Books.

Knox, Frank, (1984), Gatton and its Parish Church - A brief history.

Postscript 18 August 1985

Paul W. Sowan

Since the foregoing was written, there have been unfortunate developments. When the site was visited on 27 July 1985 it was found that the wooden and slate roof to the covered way had been demolished and (with the ivy that had covered it) thrown inside. Whether the marble floor continued throughout its length could not, therefore, be seen - this decorative floor is visible along the line of the demolished part of the way, near the house. The walls can now be seen to be of local firestone externally, but of brick inside with rather plain plaster with a fake 'ashlar' pattern. According to the local historian of Gatton, Mr Frank Knox, no parallel example of such a covered way is known.

FRANK ILLINGWORTH'S TUNNEL

John Vigar

The Kent coastline has an impressive history of smuggling, and almost every old house or inn near the sea is linked by local legend with the smugglers. However, it is often of little interest as there is nothing tangible to see and connect with that earlier age, and people still prefer to study what they can see. It is thus most interesting to find a tunnel that seems to have been constructed for smuggling purposes but which has survived almost unnoticed.

The tunnel first comes to light in an article in the journal of the Men of Kent and Kentish Men in 1938, written by a local historian, Frank Illingworth. It records a visit that he made to a tunnel loosely placed as "between Pegwell and Margate", which extended for many yards from the cliff face to a "domed room". During this exploration, which involved a continuous crawl, Illingworth found a pin fire pistol and some buttons believed to have come from an "exciseman's tunic". This article, with two photographic illustrations, has been quoted on many occasions and many people have searched for the tunnel without success.

After some considerable research, the present writer was able to rediscover the tunnel, survey it accurately for the first time, and compare it with Illingworth's record of 45 years ago.

The entrance to the tunnel is 7 feet (2.1 m) up in the sea cliff between Pegwell Hoverport and the Belle Vue Hotel, at grid reference TR 357644, and is not accessible at high tide. The passage is about 500 feet (150 m) in length, and agrees with Illingworth's account in that it is a flat-out crawl. The dimensions of the passage are 2' 3" (0.68 m) high and 1' 7" (0.48 m) wide. It is cut through the chalk, and is unlined. It appears from the entrance that the tunnel or passage was originally higher, but that the base has become filled in with rubble.

Illingworth's account tells that after "200 yards" (183 m) a shaft to the surface was reached, which he thought might have been an escape route for the smugglers and their goods. In fact, this shaft is about 150 yards (137 m) in. It is of very rough construction, and the junction between the chalk and topsoil can clearly be seen near the top, which is blocked. The total height of open shaft is about 12 feet (3.6 m), but how thick the block at the top is we cannot say, although it is much less than the depth of cliff, as the tunnel climbs over its entire length.

At intervals along the tunnel there are cylindrical holes in the roof, apparently going to the surface. These may have been used to steer the course of the tunnel during construction, as the tunnel nearly always changes direction immediately afterwards. After the shaft the tunnel continues. Illingworth said it went "on...on...on...", but he encountered a fall of chalk which he then unblocked to see in the distance a domed room and the passage continuing. This is where he and his colleagues decided to give up. The present writer was able to follow the tunnel for a further 75 feet (23 m) when another shaft to the surface was found. This is totally blocked, and it is impossible to continue. It is also impossible to turn around there.

That, then, is the state of the tunnel today, and it is up to us to decide why it was built, and when? Illingworth came across the tunnel after being told of its existence by "the Banger brothers whose family had lived in this part of Kent for generations". It was their impression that the tunnel had linked Osingell Farm with the house known as "Lord of the Manor", and the sea, and that the first shaft they had encountered was where an ancient cottage had once stood.

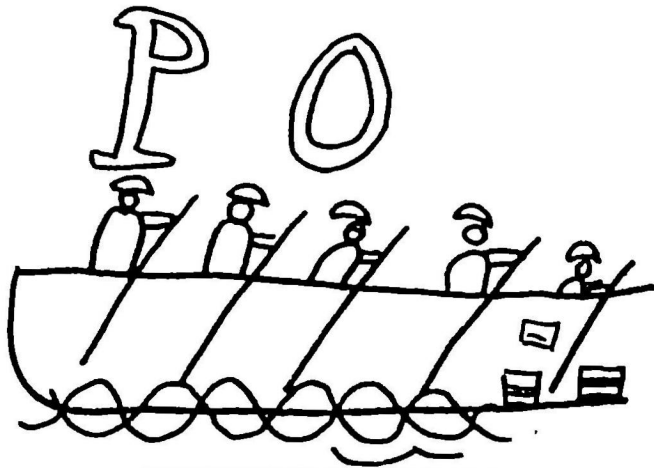
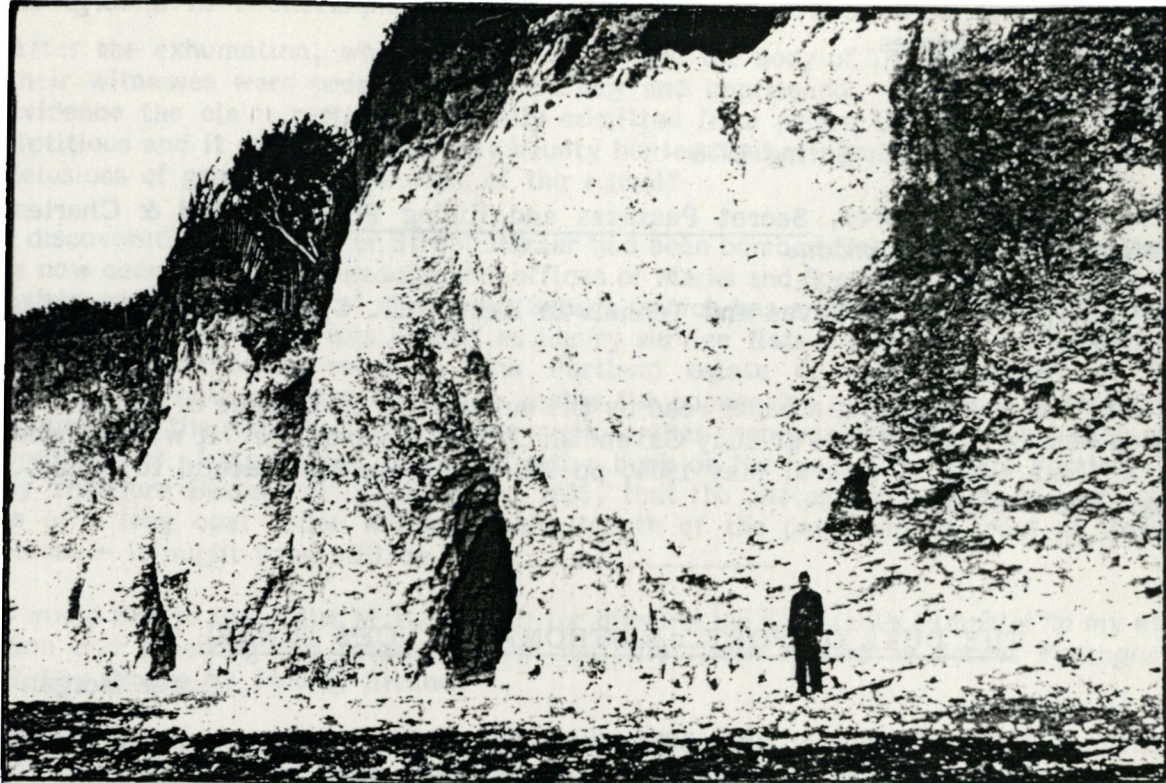
From the sources available to us it is possible to check some of these statements. Firstly, from the Census returns for the area it is interesting to note that the Banger family first appear at Pegwell Bay in 1851. They were one of a number of families earning a living from fishing for shrimps - a local speciality, although by the time Illingworth met them in the 1930s they had been reduced to worm-diggers!

Secondly, a look at the Tithe Map of St Lawrence parish indeed shows that there was a cottage, now demolished, above the line of the tunnel! Accurate plotting on the ground revealed no trace of the cottage, or of the blocked shaft. There was also no trace of the second shaft, which would now emerge in the centre of a field. The cottage was still standing in 1874 when the Chilton Farm Estate on which it stood was sold, but by the 1881 Census the number of households in the area had dropped by one, possibly indicating that it had recently been demolished. It would indeed have been within the Banger family's timescale.

The construction of the tunnel gives us no clues, although it would appear that it dates from the late 18th or 19th centuries. There are some remarkable graffiti on the walls, some of which definitely dates from the last century. One of the best features is a simple carving of five men with hats on, rowing a boat in which there is a pile of boxes. This could possibly indicate a smuggling connection. We do not know where in the cottage the shaft would have emerged - in the house or the garden, although it is more likely to have been in the house itself. As it slopes to the sea it might have been an elaborate drainage system, but this is unlikely. We do not know how far it continues past the blocking, and whether Illingworth's information can be relied upon. However, this puzzling feature will no doubt be with us for many more generations, and the mystery may be solved.

The present writer gratefully acknowledges the considerable help given by the many local residents, particularly the Steed Trust and Mr Jack Finch.

The author standing just below the entrance to Illingworth's Tunnel.
The two holes on the left are natural sea caves. Photographs Terry Reeve 1983



← graffito on the wall
(smugglers' boat ?)

below illustrates the
narrowness of the
tunnel



This tunnel is not suitable for exploration by those inexperienced in underground techniques and procedures.

References

Kent County Journal, Spring 1938

Errand, Jeremy (1974), Secret Passages and Hiding Places, David & Charles, Newton Abbot and London.

Pearman; H. (1973), Caves and Tunnels in Kent, vol. 6, Chelsea Speleological Society.

This article was written from a paper read by the author at a conference of Subterranea Britannica held in January 1984 at Lucy Cavendish College, Cambridge. It was published in *Bygone Kent*, Vol. 5, No. 5, May 1984, pp 262-4, and we are grateful to them for allowing us to reproduce it.

THE DUKE OF PORTLAND/THOMAS DRUCE'S TUNNEL

Roger Morgan

In the dawn of Monday December 30th, 1907, the coffin of a master draper named Thomas Charles Druce, who had been buried 43 years earlier, was exhumed within a circle of life-guards in Highgate Cemetery, London. It was claimed by his daughter Anna Maria Druce, and subsequently by her first legitimate son George Hollanby Druce, that Thomas Charles Druce was none other than the fifth Duke of Portland who, eventually tiring of his double life, engineered a false funeral for Druce with a weighted coffin.

The Duke, a notorious eccentric who had died 28 years earlier, had a Howard Hughes complex and lived as a total recluse. If the claim was true, Thomas Charles Druce's will was invalid, disinheriting his first but illegitimate son Herbert Druce, and George Hollanby Druce would become the sixth Duke of Portland and acquire a fortune of £16 million. During the protracted and involved lawsuits in which Mr Robinson was a leading advocate and which culminated in the exhumation, the extraordinary claim was made that the Duke effected his transformation into Druce via a *tunnel joining his London abode Harcourt House to Druce's shop, the Baker Street Bazaar.*

That credence could be given to this fantasy was due in part to the extraordinary lengths the Duke of Portland went to to conceal himself from view, including constructing an extensive underground system at his country house Welbeck Abbey, Nottinghamshire. This included a ballroom, and a tunnel three quarters of a mile long under a lake, along which the Duke's carriage (with blackened windows) was transported on a railway to the entrance of the estate. All workmen were instructed to pretend the Duke (who often wore four overcoats) was invisible if they met him about the estate, and the slightest acknowledgement of his presence led to instant dismissal. Very few people ever saw him, but it was claimed that on the occasions that the Duke was at Welbeck, T.C. Druce was absent from the Bazaar, and vice versa. The two men were physically similar and had the same habits, interests and employed the same contractors. Druce's origins and finances were obscure.

The scenario painted by the claimants was that the Duke would be served his morning kippers on the family silver by his flunkies, and then descending to the basement of Harcourt House would enter the tunnel, changing from his satin and ermine to the seedy broadcloth of Druce somewhere under Baker Street, emerging in the Bazaar to admonish his ledger clerks and obsequiously serve his crinolined customers with ribbons in the guise of Druce! Harcourt House had been demolished in 1906, and in an illustrated pamphlet to publicise the claim (*The Druce Portland Case written by the Claimant George Hollanby Druce - the only true account of the evidence as told in the Tatler*) a photograph was included of the supposed tunnel which had been found.

After the exhumation, which of course revealed the body of Druce, the claimants and their witnesses were prosecuted for perjury and imprisoned. Mr Robinson, on whose evidence the claim rested, eventually admitted from prison that the whole story was fictitious and it seems evident that bounty hunters had manipulated Anna Maria Druce's delusions of grandeur. But what of the tunnel?

I discovered that the Baker Street Bazaar had been bombed flat in the war, and the site is now occupied by the headquarters offices of Marks and Spencer. Harcourt House still exists on the west side of Cavendish Square (which has a very fine double helix underground carpark!), but was rebuilt as luxury service flats - now used as Harley Street specialists' consulting-rooms. The Portland estate did extend almost to Baker Street, but not quite far enough to enable the connection of the tunnel to the Bazaar; in any case the distance involved was much farther than was credible. What then of the photograph? I discovered in the definitive book on the case, *The Druce Portland Case* by Theodore Besterman, Duckworth, 1935, that the photograph, which he reproduced, is of a long coal cellar which ran the length of the pavement in front of Harcourt House - it might even still be there!

I would like to thank Mrs M.W. Walker for drawing the Claimant's pamphlet to my attention and renewing my interest which had first been stirred by *Secret Passages and Hiding Places* by Jeremy Errand.

STUDY WEEKEND AT IRONBRIDGE - 14-16th June 1985

Deryck Laming

For one of the visits on the Study Weekend the notes supplied advised "full caving gear". However, after forcing our way through head-high nettles, brambles and fallen trees, we wondered whether the gear was needed below ground or was more important above! At the end of one of these jungle journeys, we were very pleased to find an underground temple in red sandstone. It was a small temple with many crudely carved pillars and arches and, with 25 Sub Brit members in it, was decidedly cramped. However, a few people managed to shoot off some flash pictures while others examined a crude altar, sifting through some charred relics - apparently no human bones were involved although cabalistic symbols written on the wall in charcoal suggested that some witchcraft events had recently taken place here. How even the witches could find this underground temple remains a mystery, it was so well hidden, but luckily we had a leader who knew the place well.

The weekend began on the Friday night with the usual get-together in a pub. This year, however, the pub was a rather special one, The New Inn in the Blists Hill Open Air Museum. No chromium plate or piped music here - this was a living museum pub, with gas lights and dark wood benches recreating the atmosphere of a Shropshire mining community in the end of the last century. Only the prices seemed to have been brought up to date.

On the Saturday morning, we visited several parts of the Museum complex, which stretches for more than a mile along the the Severn Valley and includes the Iron Bridge itself, built in 1769. Our first call was at the Tar Tunnel, which must have been Britain's earliest attempt to produce oil because the tar which accumulates in pits beside the tunnel, conveniently illuminated for visitors, is a natural seepage of hydrocarbons from the enclosing Coal Measures. We were let through the iron gates at the end of the public part of the tunnel and were able to see additional interesting features further inside. The tunnel itself, with a total length of 450 metres, was bricked throughout as far as we could go and extended into solid rock beyond.

The party then divided. I went with the larger group to the Snailbeach Mines southwest of Shrewsbury, where a number of tunnels and stopes had been driven into the side of Stiperstones, a mountain of ancient rock cut by veins and faults. A large calcite vein with barytes had been exploited in the last century and we entered, through a difficult

entrance as usual, but found a large set of tunnels inside. At one point we had to cross the large mined-out stope by a wooden bridge, which nobody thought was in a safe condition because of the large amount of fallen rock lying upon it. However, with the help of ropes and guidance from our leader, we all got across without trouble and explored further into the mountain, finding another stope and several exploratory adits which had tried to find further veins, unsuccessfully. The afternoon finished with us walking to the top of the hill to see other shafts and the old engine houses associated with the mine.

The second group spent a fascinating afternoon touring Hawkstone Park Estate, (generally not open to the public) under the expert guidance of Jack Jones who is the last of the line of his family's guiding tradition from his great grandfather downwards. They peered down various 'holes' in the ground, for example the deep cavity under the Great Tower of the Red Castle; but the most spectacular edifice was the rock called Grotto Hill, riddled with passages and chambers including a 'Druid' archway. Although altered and added to in the 18th century for aesthetic reasons, the guide believes that originally the tunnels and caverns within this strategically high position had some defensive function.

The evening, traditionally, was given over to a dinner for all members and visitors, followed by colourslides. This was held in the upper room of The New Inn, furnished in turn-of-the-century style with wooden tables and genuine gas lighting, but fortunately the "magic lantern" proved to be entirely modern. Dr Ivor Brown of the Shropshire Mining Club showed us many fascinating aspects of Shropshire mining, and other members then showed their slides.

On Sunday morning, many members investigated an iron-ore mine that had been reported in the garden of a house where one of us was staying. The problem with siderite ore is that it gives off asphyxiating gases due to chemical change, and these come off most abundantly during low barometric pressure. Fortunately, it was a high-pressure weekend, but nevertheless inside the mine the air was not good and candle flames snuffed out, so the party did not penetrate too deeply. We then visited the Caynton Temple, with its cabalistic signs, and then on to Badger Dingle, where an interesting ice-house and some disappointing rock houses were found, together with evidence of occasional quarrying of red sandstone.

Most of the party then went on mysterious underground structure in Mossy Green and a brewery well in Wellington.

However, it was a very interesting and enjoyable weekend and our thanks go to the members of the Shropshire Mining Club as well as those of Subterranea Britannica who organised the weekend.

Book Review

Out of the Darkness: a brief history and description of the Old Quarry, Beer: by John Scott and Gladys Gray, 21 pages, £0.95.

This well produced booklet had been published by two of the three organisers of the recently opened Beer Quarry Caves at Beer, East Devon. These are extensive room-and-pillar underground workings for Beer stone, a variety of chalky limestone much prized for its carving qualities. The booklet provides a useful history starting with the basic geology and the Roman origins of the mines, through its heyday (several centuries, actually) to its present-day use as an interpretation centre (what we used to call a "museum") of quarrying. Men, methods and transport have been carefully researched and are well illustrated in the centre pages of the booklet, together with details of cathedrals and other notable buildings where Beer stone has been used.

